

Portage Creek Area Time Critical Removal Action

Progress Update

Public Meeting

1/09/2013

The map illustrates the Portage Creek Area, starting from Lake Michigan on the left and flowing southeast towards Lake Allegan and then Portage Creek. Key locations and landmarks include:

- SAUGATUCK** and **DOUGLAS** near Lake Michigan.
- ALLEGAN** near Lake Allegan.
- Former Trowbridge Impoundment** and **Former Plainwell Impoundment** along the creek.
- OTSEGO** and **PLAINWELL** further downstream.
- Former Otsego Impoundment** and **12th St. Landfill OU** near Otsego.
- Plainwell No. 2 Dam Area** near Plainwell.
- KALAMAZOO** and **GALESBURG** near the mouth of the creek.
- King Highway Landfill OU**, **Allied Paper, Inc. OU**, **Willow Boulevard/A-Site OU**, and **Morrow Lake** near the bottom right.

A blue box labeled **Portage Creek Area** with an arrow points to the lower section of the map, specifically towards the Kalamazoo and Galesburg area.

- ## Portage Creek Area

Command Post



**Portage Creek Cleanup
MAIN OFFICE**

**220 E. Crosstown Pkwy
Kalamazoo, MI 49001**

Office trailers
De-watering / transfer pad
Equipment Staging
EPA's Mobile Wastewater
Treatment Plant



'Springfield Belle' Wastewater Treatment Plant

Staging / De-watering Pad



04/04/2012 18:00

Wastewater Treatment (contact water, wheel wash, staging pad run-off)

MDEQ
required SRD
(weekly
samples)

50 gpm

Sump -> Frac
tank ->
25 u filters ->
5 u filters ->
1 OMC & 2
carbon
vessels ->
1u filter ->
Creek

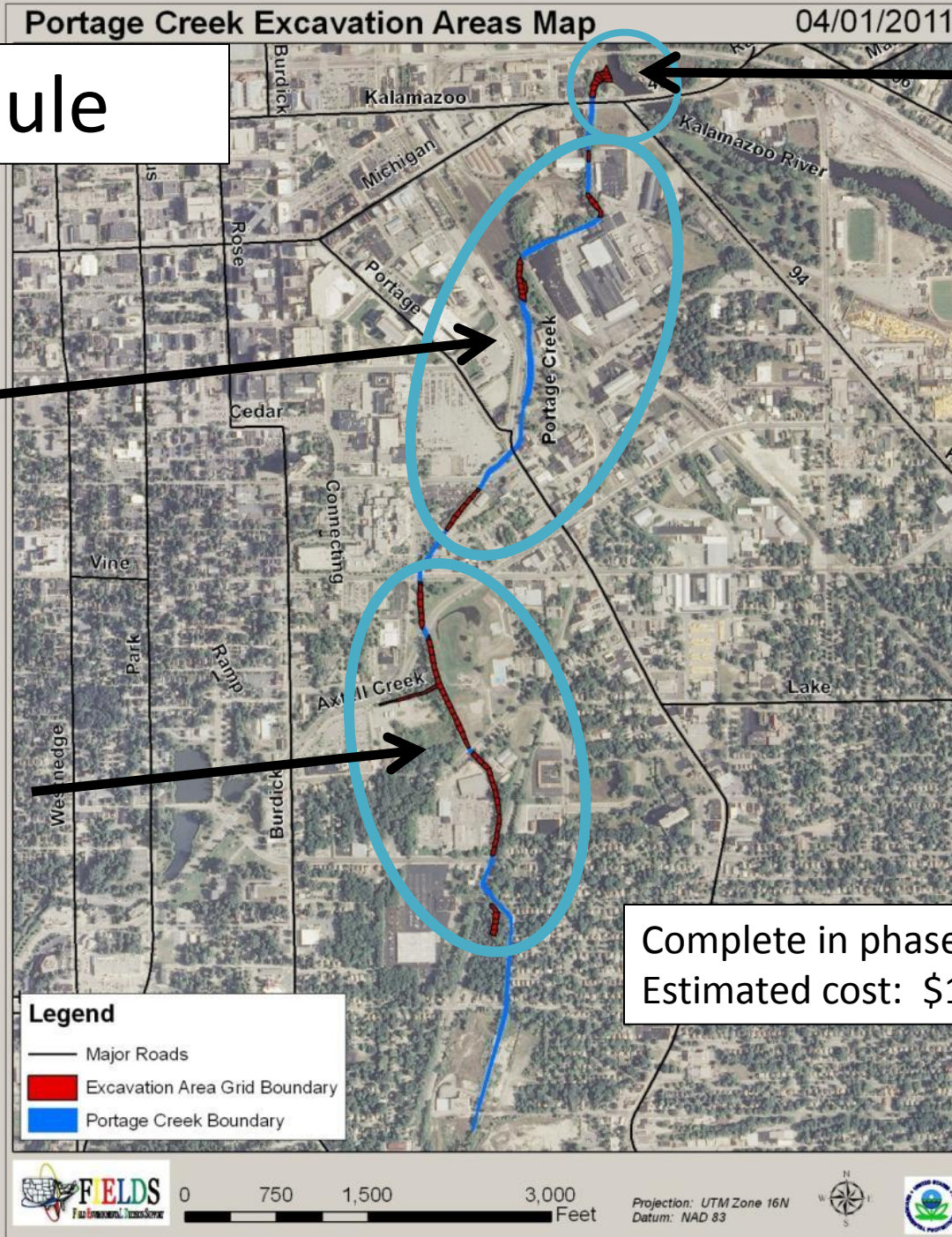


Schedule

2014
SA1-A

2013
SA5-A
SA3-A
SA1-B&C

2012
SA7
SA6
Axtell Creek
SA5D&C
- completed -



Legend

- Major Roads
- Excavation Area Grid Boundary
- Portage Creek Boundary

Complete in phases in 2-4 yrs
Estimated cost: \$15.8m

Operations Overview

Site Preparation

- Clear & grub for access
- Pre-survey (structural feature, engineering, precondition photo documentation, topographic/bathymetric)
- Data gap sampling (sediments, UpJohn Park, etc.)
- Access
- Area-specific controls (security, environmental, H&S)
- Isolation
 - Task 1- Cofferdam construction
 - Task 2- By-pass pumping ongoing during removal
 - Task 3- Excavation area dewatering and water treatment



Pre-survey



Operations Overview (cont)

Contaminated sediment removal

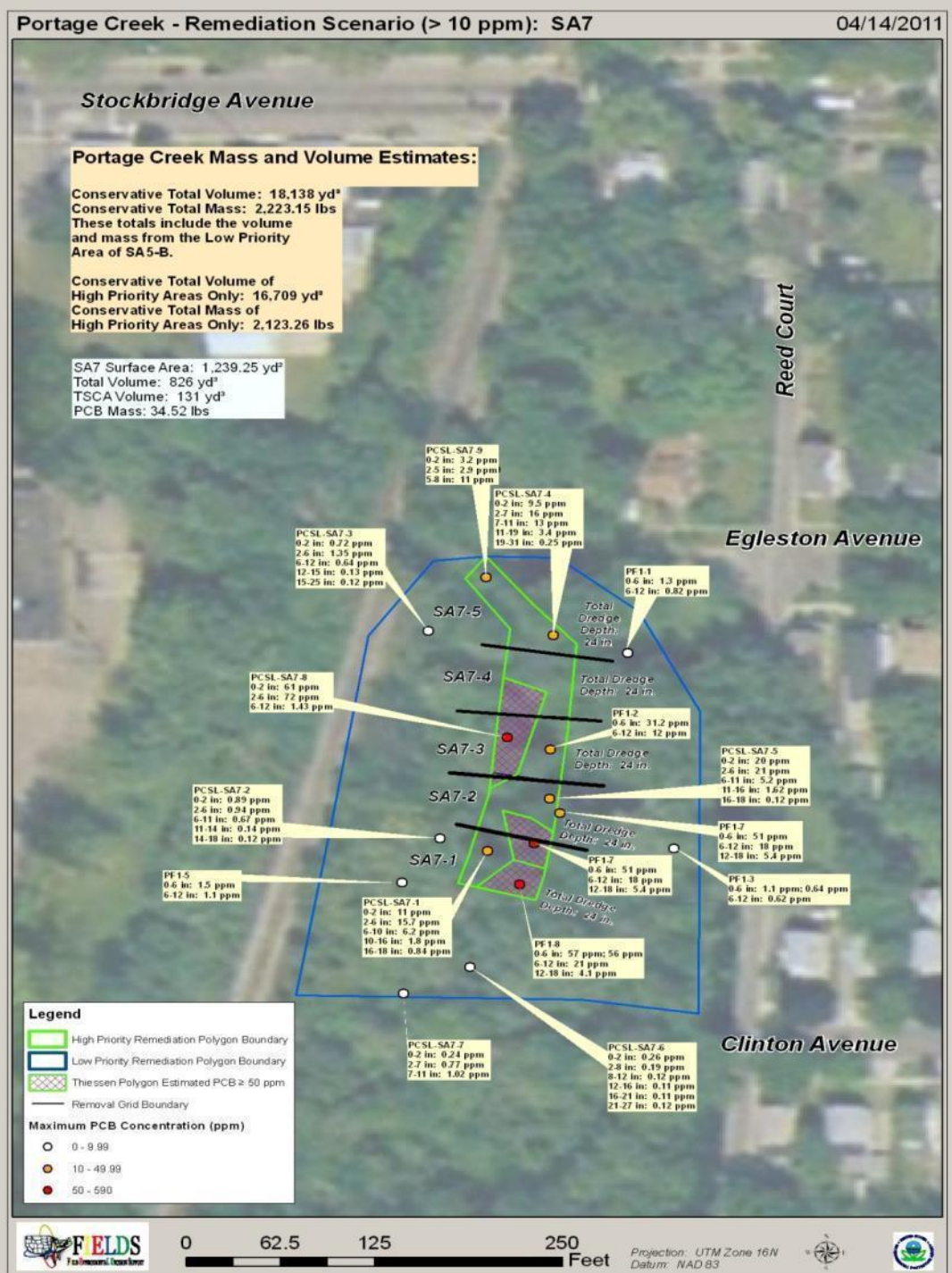
- Preliminary solidification/Load & transfer sediment to dewatering pad
- Final stabilization/solidification for disposal/2ndary staging for shipment
- Load out for disposal (subtitle D, or TSCA landfill)
- Verification sampling/re-excavate and resample as needed
- Post removal survey (Structural feature, Topographic/bathymetric)

Operations Overview (cont.)

Site Restoration

- Backfill stream channel/bank
- Cofferdam removal
- Removal area restoration planting
- Infrastructure restoration activities (fence replacement, asphalt repairs, etc.)
- Remove sediment erosion controls after re-vegetation
- Post condition documentation

**Forested wetland
between
Stockbridge Ave.
&
Reed St.**





Delayed Start – Winter 2011



Staging Area
423 Reed St



03/29/2012 17:58



Access Road

03/29/2012 18:13

Excavation



March / April
2012



May 27

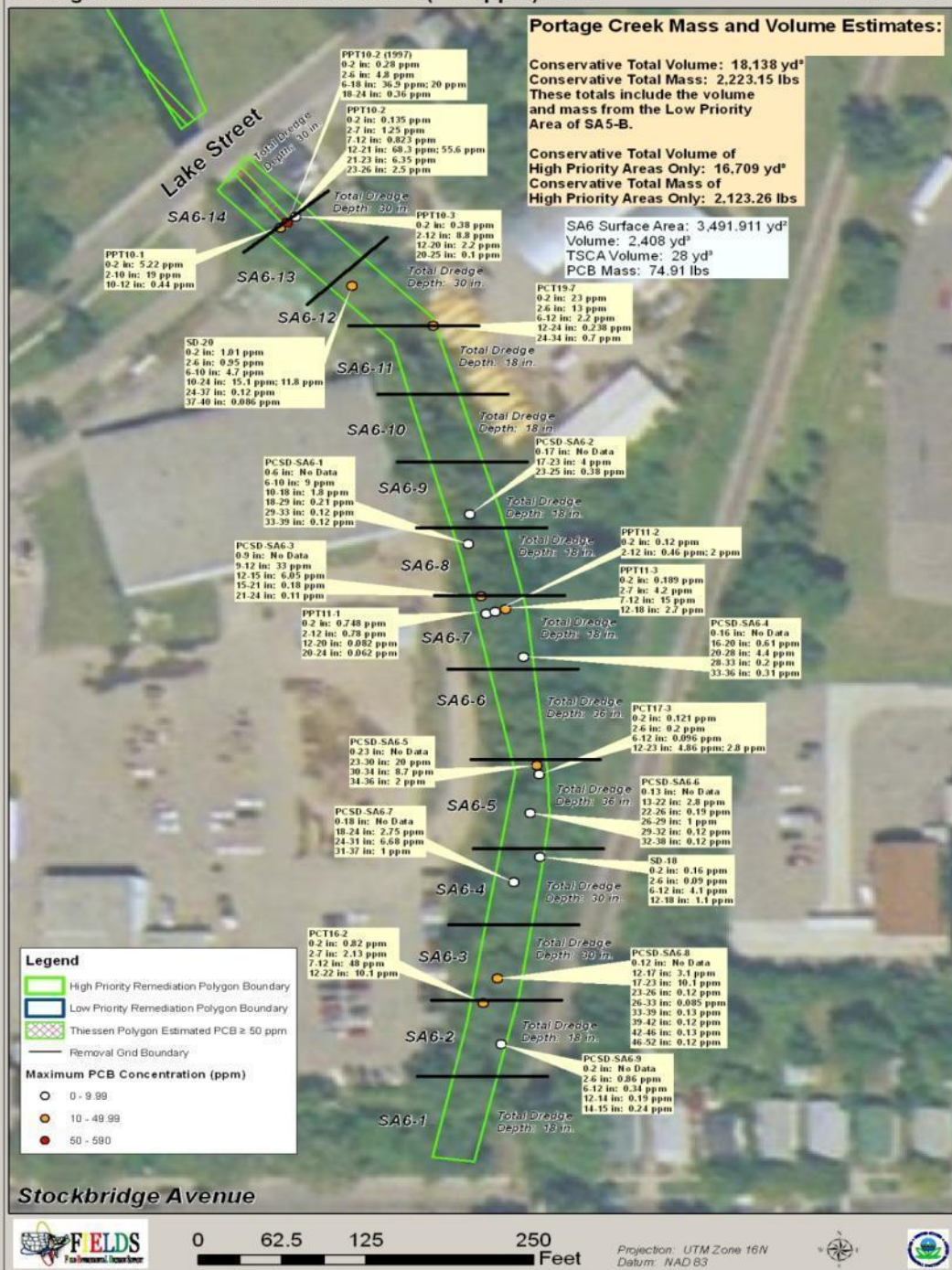
05/27/2012 11:24

September 20, 2012



SA6

Stockbridge Ave to Lake Street



Work Area Preparation



Clearing / Grubbing & Mat Placement



04/30/2012 13:33



Creek Bypass Pump System



Creek Water Quality Monitoring

(1 upstream, 2 downstream monitors)

Groundwater de-watering system



Sipper wells
manifold to 6" PVC
headers running to
6" diesel pumps



'Sipper Well' header / manifold

Butterfly valve
used to control
vacuum on
sipper well

1.5" PVC well
with slotted
screen at bottom

Typical
installation depth
20-25'



Excavation





Solidification / Load out

Truck Tire Wash Unit



John Street Staging Pad



TSCA (>50ppm) – EQ (Detroit)
Non-TSCA (<50ppm) - C&C Landfill (Marshall)

05/25/2012 07:42

Separation of TSCA & Non-TSCA sediments on staging pad



Backfilling





Backfilling / Restoration



Axtell Creek – John Street to Portage Creek

Portage Creek - Remediation Scenario (> 10 ppm): Axtell Creek

04/14/2011



Site Preparation

(Excavation in July)



Axtell Creek By-pass system



- Two 6" pumps
- 8" suctions
- Manifold into 12" discharge line to maximize performance



Axtell Creek Excavation

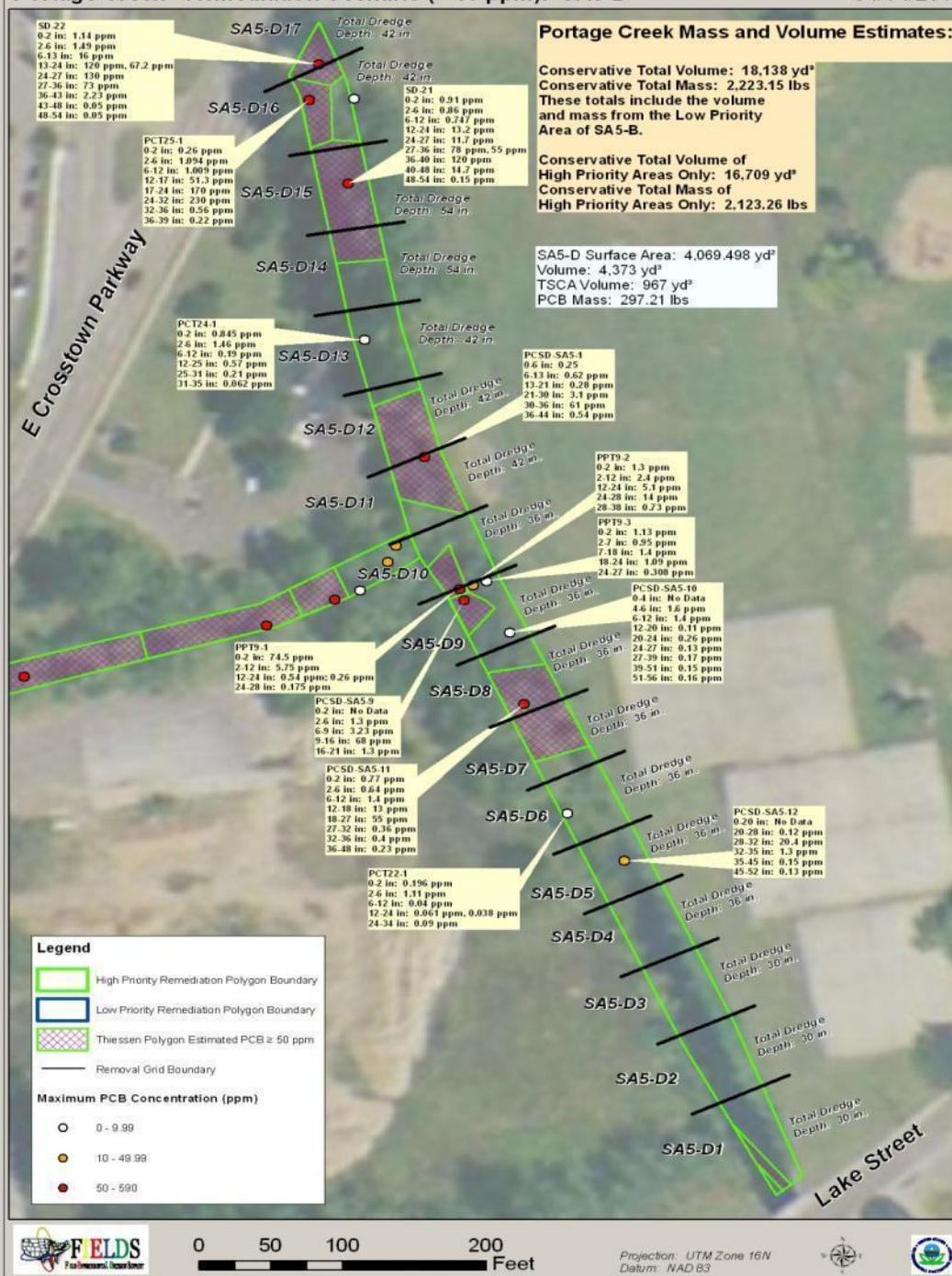


SA5-Axtell
November 2012



SA5-D

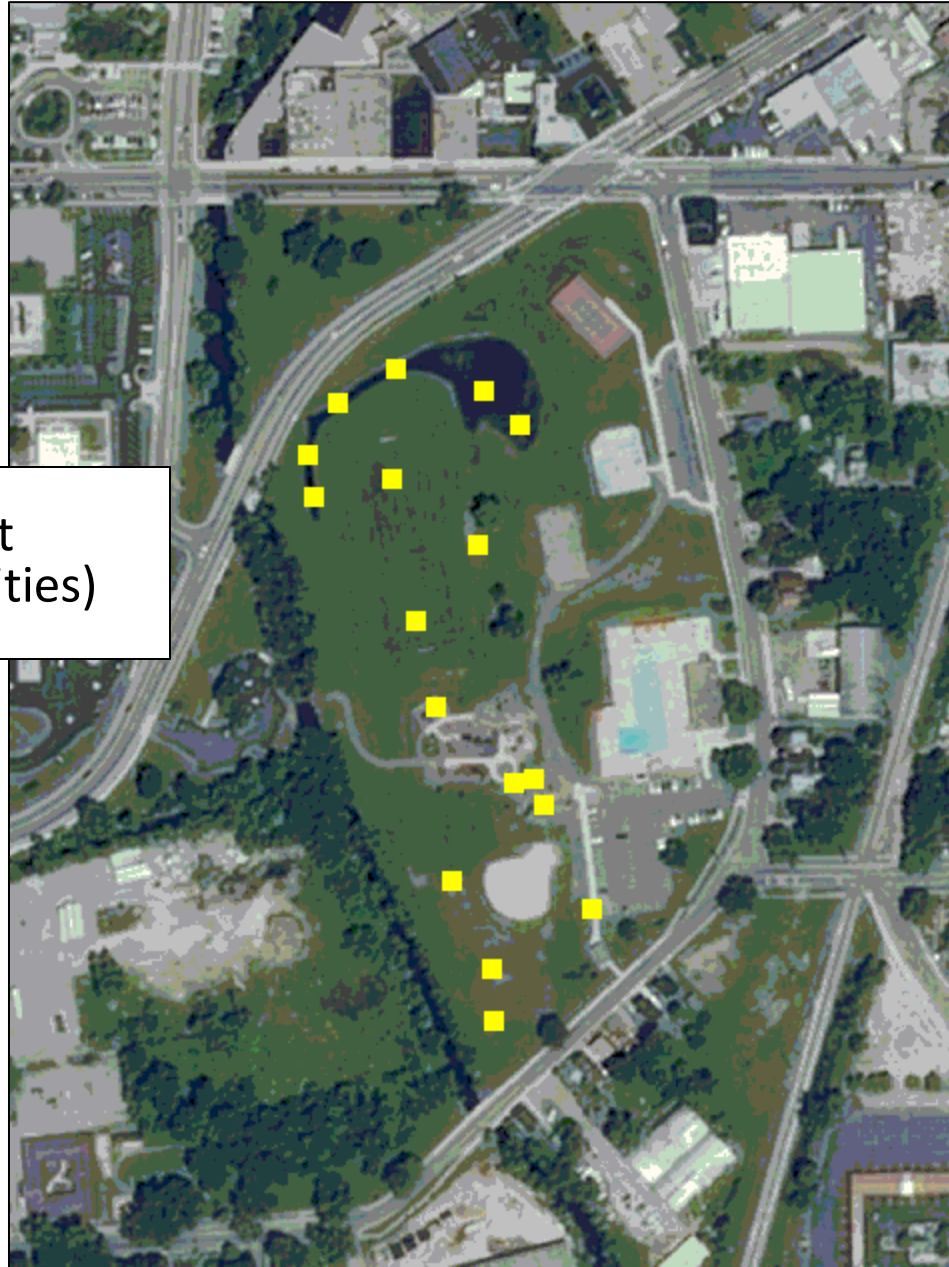
E. Crosstown Pkwy to Lake Street



Upjohn Park Sampling



All results were non-detect
(below lab instrument capabilities)



SA5D Creek By-Pass System



- Locking, sound dampening cabinets
- Easier to work on
- Better fault indication
- Resolved many problems vs. 24's in SA6

4 – 12" pumps w/ 12" suctions
2 – 18" discharge lines
1 – 12" backup pump
1 – 1000 gal fuel cell



SA5 By-Pass Discharge Lines



Discharged onto gabion baskets downstream of excavation area behind sand bag coffer dam

Fusion welded HDPE lines were flexible in the sun

Used 45's to run under street bridges to avoid pump re-set on other side



SA5D Excavation



SA5D Restoration



SA5-D

November 2012

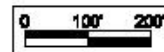




LEGEND



REMEDIATION BOUNDARY



REV	DESCRIPTION	DATE	APPROVED



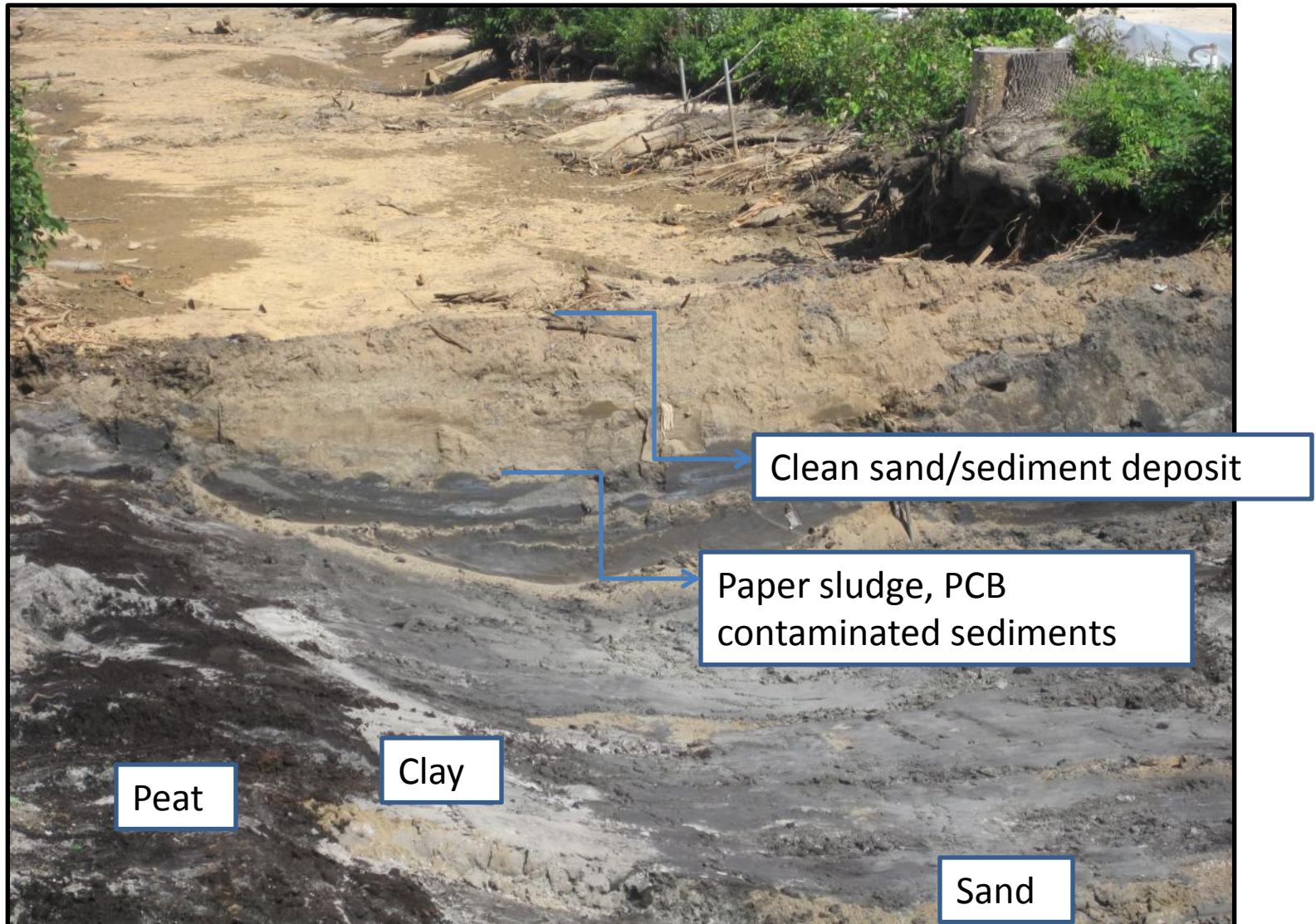
DATE	BY	FOR

PORTAGE CREEK AREA SAs-C & SAs-D EXCAVATION AND WORK BOUNDARIES			
REV	PROJECT NO.	DATE	FILE
A	30281.0087	FIGURE 2	D

SA5C Excavation



SA5C Excavation



SA5-C

November 2012



Verification Data

- Multiple grids required over-excavation from target depths
- Verification samples are taken at target depth to justify over-dig
- Confirmation samples are taken at final depth for clean-up objectives



GRID	TARGET DEPTH (in)	INITIAL PCB RESULT (ppm)	OVERDIG (in)	TOTAL DEPTH (in)	CONFIRMATION PCB RESULT (ppm)	2nd OVERDIG (in)	TOTAL DEPTH (in)	2nd CONFIRMATION PCB RESULT (ppm)
AXC-1	24	27.9	12	36	35.8	24	60	ND
AXC-2	30	8.9	12	42	14.3	24	66	0.97
AXC-3	24	16.1	12	36	19.3	24	60	6.97
AXC-4	30	18.7	12	42	22.6	24	66	0.061
AXC-5	24	4.15	6	30	3.93	6	36	0.189

Example of grid data from Axtell Creek

Cleanup Performance Standard/Goal

- Initial project estimate approximately 17,000 yd³
- In-stream sediment
 - Standard = 10 mg/kg
 - Goal = 1 mg/kg with 6" over-dredge
 - All samples from SA6, SA5-Axtell, SA5D, & SA5C meet performance standard
 - All but 2 samples also meet performance standard goal
 - Range non-detect to 6.97 mg/kg
- Floodplain soil = 5mg/kg with 6" over-dredge
 - All SA7 confirmatory samples (5 taken) < 5 mg/kg
 - Range non-detect to 1.26 mg/kg
- Dredge depths range 12" – 71" over entire area

Summary of Original Estimated vs. Final Volume for Areas Excavated during FY 2012

Removal Area	Original Volume (yd³)	Final Volume (yd³)	Increase in Volume (yd³)
SA5-C	2,040	2,871	831
SA5-D	3,880	4,504	624
SA6	2,737	2,982	245
SA7	826	826	0
Axtell Creek	849	1,871	1,022
Total	10,332	13,054	2,722

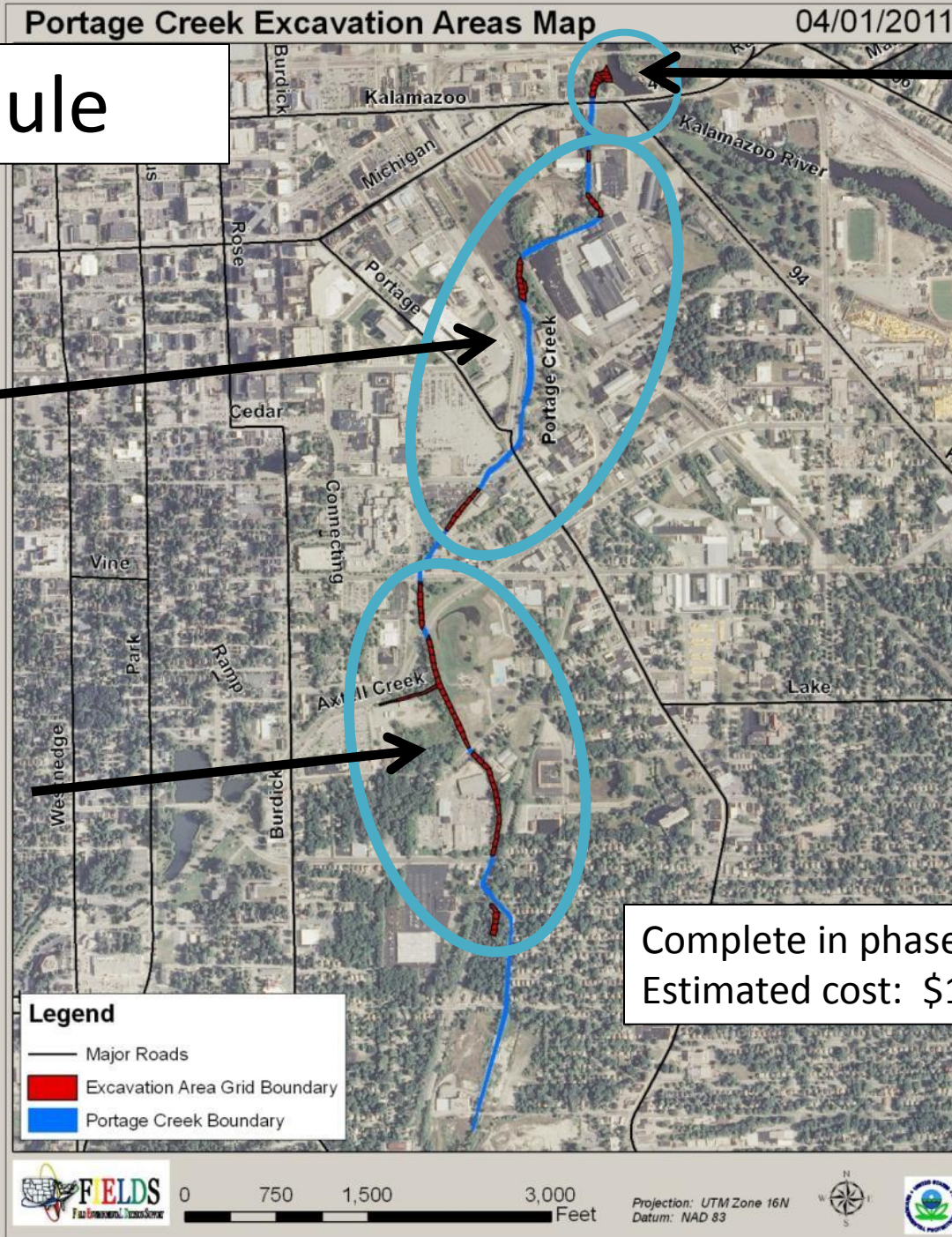
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Project Partners

- State of Michigan
- Kalamazoo City
 - Dept. of Public Services
 - Planning
 - Economic Development Dept.
 - Parks & Recreation Dept.
 - School District
 - Tree Committee
- Kalamazoo
 - Nature Center
 - River Cleanup Coalition
 - River Watershed Council
- U.S. Fish & Wildlife Service, NOAA
- Others
 - Private property owners
 - Utilities (railroad, power, phone, gas)
 - EQM & Weston Crews

Questions ?

www.epaosc.org/portagecreekarea



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